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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/735,256	12/12/2000	Cathy L. Blouin	BUR9-2000-0050-US1	4768
29154	7590	11/17/2005	EXAMINER	
FREDERICK W. GIBB, III GIBB INTELLECTUAL PROPERTY LAW FIRM, LLC 2568-A RIVA ROAD SUITE 304 ANNAPOLIS, MD 21401			NELSON, FREDA ANN	
			ART UNIT	PAPER NUMBER
			3639	

DATE MAILED: 11/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/735,256

Applicant(s)

BLOUIN ET AL.

Examiner

Freda A. Nelson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☒ Claim(s) 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

The amendment received on September 20, 2005 is acknowledged and entered. No claims have been added. Claims 1-24 are currently pending.

Response to Amendment and Arguments

Applicant's arguments filed September 20, 2005 have been fully considered but they are partially persuasive.

In response to applicant's arguments regarding claims 1-7, the examiner asserts that Manufacturing discloses showing a relationship between critical gate dimensions (feature size reduction and/or active elements) and costs. Manufacturing also discloses that semiconductor chips are cheap, and continue get cheaper each year (see FIG.2).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, motivation is in the reference- see Evans (col. 3, lines, 7-34 and col. 5, lines 19-39).

Claim Objections

Claim 27 is objected to because of the following informalities:

In claim 27, line 1, "reduced" should be "reduced."

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 27 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 27 is incomplete, therefore, the examiner is unable to determine what the applicant is claiming .

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over "21st Century Semiconductor Manufacturing Capabilities" (hereinafter referred to as "Manufacturing), in view of Evans et al. (Patent Number 6,775,647).

As for claims 1 and 21, Manufacturing discloses a system for predicting semiconductor product costs at a fabricator comprising:

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a storage medium including a database of historical critical gate dimensions and historical critical ground rules correlated to cost functions at said fabricator (page 1, FIGS. 2-3; Tables 1-3);

a user interface (keyboard or mouse) having user inputs for new design parameters and new critical ground rules associated with a new device to be produced at said fabricator; and

a computer adapted to:

receive said user inputs (see especially Figs. 2-3, Tables 1-3 and Supra Response to Applicant's Argument);

create, in said database, models from said regression analysis only showing a relationship between said historical critical gate dimensions and said historical costs (see Supra Figs. and Tables); and

input new design parameters and new critical gate dimensions of a new device into the database and predicting product costs of the new device based on the models (see the entirety of document, to note how "Operational modeling and simulation" and "Knowledge Management" work to compute the costs for the new design).

Manufacturing does not expressly disclose the method including the step of performing a regression analysis on historical costs of historical critical gate dimensions at said fabricator, using said historical critical gate dimensions as independent variables and said historical costs as dependent variables. Evans et al. teaches, for a method and system for estimating manufacturing costs, that the invention performs a regression analysis for developing new products (e.g. see col. 5, lines 19-38). Since Evans et al. and Manufacturing are both from the same field of endeavor of predicting a cost for developing new products, the purpose disclosed by Evans et al. would have been well recognized in the pertinent field of Manufacturing. Accordingly, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention of Manufacturing such that the invention performs a regression analysis based on a relationship between the historical gate dimensions and the costs (see Fig. 2 and Table 1 of Manufacturing), as taught by Evans et al., for the purpose of providing an advantage of cost modeling for an engineer who is striving for a better understanding of the cost of his design and seeking to reduce production costs..

As for claims 2 and 22, the modified system of Manufacturing discloses that the historical critical dimensions and said new critical dimensions comprise gate dimensions (FIG. 2 and Tables 1-2 of Manufacturing).

As for claims 3 and 23, the modified system of Manufacturing discloses that the new critical gate dimensions are smaller than said historical gate dimensions (see Id.).

As for claims 4 and 24, the modified system of Manufacturing discloses that the new device comprises a future technology generation (see FIG. 2 of Manufacturing).

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As for claims 5 and 25, the modified system of Manufacturing discloses that the fabrication hardware and fabrication methods for producing said future technology generation are unknown (see *Id.*).

As for claims 6 and 26, the modified system of Manufacturing discloses that the models comprise base and models that include options (See FIGS. and Tables).

As for claims 7 and 27, the modified system of Manufacturing discloses that said the models illustrate that costs increase exponentially as said historical critical gate dimensions are reduced.

As for Claim 8, Manufacturing discloses a method comprising the steps of:
performing a regression analysis on historical costs of historical critical gate dimensions at a fabricator, using said historical critical gate dimensions as independent variables and said historical costs as dependent variables (see Figs. 2-3 and Tables 1-3 and the descriptions thereof);

creating, in a database, models from said regression analysis only showing a relationship between said historical critical gate dimensions and said historical costs (see *Supra* Figs. and Tables); and

inputting new design parameters and new critical gate dimensions of a new device into the database and predicting product costs of the new device based on the models (see *Supra* Response to applicant's argument).

Manufacturing does not expressly disclose the method including the step of performing a regression analysis. Evans et al. teaches, for a method and system for estimating manufacturing costs, that the invention performs a regression analysis for developing new products (e.g.-see col. 5, lines 19-38). Since Evans et al. and Manufacturing are both from the same field of endeavor of predicting a cost for developing new products, the purpose disclosed by Evans et al. would have been well recognized in the pertinent field of Manufacturing. Accordingly, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention of Manufacturing such that the invention performs a regression analysis based on a relationship between the historical gate dimensions and the costs (see Fig. 2 and Table 1 of Manufacturing), as taught by Evans et al., for the purpose of providing an advantage of cost modeling for an engineer who is striving for a better understanding of the cost of his design and seeking to reduce production costs.

As for Claim 9, the modified method of Manufacturing further discloses the method, wherein the historical critical dimensions and the new critical dimensions include gate dimensions (Fig. 2 and Tables 1-2 of Manufacturing).

As for Claim 10, the modified method of Manufacturing further discloses the method, wherein the new critical dimensions are smaller than the historical critical dimensions (see *Id.*).

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As for Claim 11, Manufacturing further discloses the method, wherein the new device includes a future technology generation (see Fig. 2 of the Manufacturing).

As for Claim 12, Manufacturing further discloses the method, wherein fabrication hardware and fabrication methods for producing the future technology generation are unknown (see Id.).

As for Claim 13, Manufacturing further discloses the method, wherein relationships include base models and models that include options (see Supra Figs. and Tables).

As for Claim 14, manufacturing further discloses the method, wherein relationships include models that illustrate that costs increase exponentially as the historical critical gate dimensions and the historical critical ground rules are reduced (see Id.).

As for Claim 15, Manufacturing discloses a system comprising:
a regression analyzer adapted to determine relationships between historical critical gate dimensions of historical technologies and costs of historical technologies (see the entirety of document, to note how "Operational modeling and simulation" and "Knowledge Management" work to compute the costs for the new design);
a user interface for inputting a new critical dimension of a new technology (see especially Figs 2-3. and Tables 1-3); and
a calculator for predicting a cost of the new technology based on the new critical dimension and the relationships (see especially Figs 2-3. and Tables 1-3).
Manufacturing does not expressly disclose the system including the regression analyzer. Evans et al. teaches, for a method and system for estimating manufacturing costs, that the invention performs a regression analysis for developing new products (e.g. see col. 5, lines 19-38). Since Evans et al. and Manufacturing are both from the same field of endeavor of predicting a cost for developing new products, the purpose disclosed by Evans et al. would have been well recognized in the pertinent field of Manufacturing. Accordingly, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention of Manufacturing such that the invention performs a regression analysis based on a relationship between the historical gate dimensions and the costs (see Fig. 2 and Table 1 of Manufacturing), as taught by Evans et al., for the purpose of providing an advantage of cost modeling for an engineer who is striving for a better understanding of the cost of his design and seeking to reduce production costs.

As for Claim 16, Manufacturing further discloses the system, wherein the historical critical gate dimensions and the new critical gate dimensions include gate dimensions (see Supra Figs. and Tables).

As for Claim 17, Manufacturing further discloses the system, wherein the new critical dimensions are smaller than the historical critical gate dimensions (see Id.).

As for Claim 18, Manufacturing further discloses the system including a storage unit adapted to store a database of the relationships (the computer system of both Manufacturing and Evans et al. MUST include the database).

As for Claim 19, Manufacturing further discloses the system, wherein the new device includes a future technology generation (see Fig. 2 of Manufacturing).

As for Claim 20, Manufacturing further discloses the system, wherein fabrication hardware and fabrication methods for producing the future technology generation are unknown (see Id.).

Conclusion

The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure.

1) Angell et al. (patent Number 6,268,226), which discloses a reactive ion etch loading measurement technique.

2) Toprac (Patent Number 6,532,428), which disclose a method and apparatus for automatic calibration of critical dimension metrology tool.

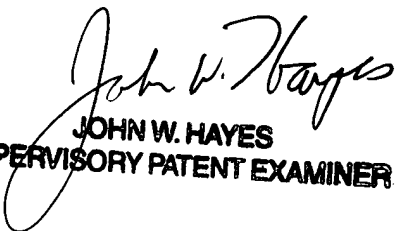
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Freda A. Nelson whose telephone number is (571) 272-7076. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Hayes can be reached on 571-272-6708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FAN 11/11/2005

A handwritten signature in black ink that reads "Freda Nelson". The signature is written in a cursive style with a large, flowing "F" and "N".A handwritten signature in black ink that reads "John W. Hayes". The signature is written in a cursive style with a large, flowing "J" and "H".

JOHN W. HAYES
SUPERVISORY PATENT EXAMINER